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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/916,599	07/26/2001	Anton C. Rothwell	NA11P022/01.106.01	8712
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2157

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/916,599

Applicant(s)

ROTHWELL ET AL.

Examiner

Saleh Najjar

Art Unit

2157

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 July 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

1. This office action is responsive to the application filed on July 27, 2001. Claims 1-22 are pending. Claims 1-22 represent method, program and system for intelligent SPAM detection system using statistical analysis.

2. The disclosure is objected to because of the following informalities:
Page 1 of the specification must be updated with the copending application data.
Appropriate correction is required.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 11-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horvitz et al., U.S. Patent No. 6,161,130.

Horvitz teaches the invention substantially as claimed including a utilizing a probabilistic classifier to automatically detect junk/SPAM mail (see abstract).

As to claim 1, Horvitz teaches a method for detecting unwanted messages, comprising:

Receiving an electronic mail message (see figs. 1-3; col. 9, lines 19-25, Horvitz discloses receiving an email message for analysis);

decomposing text in the electronic mail message (see col. 11, lines 55-60, Horvitz discloses breaking the message into units/tokens),

gathering statistics associated with the text using a classifier (see col. 9, lines 50-55; col. 10, lines 10-15, Horvitz discloses that a feature vector is extracted and associated with the message); and

analyzing the statistics for determining whether the electronic mail message is an unwanted message (see col. 9, lines 55-60; col. 12, lines 45-50, Horvitz discloses that the classifier is trained to recognize SPAM).

Horvitz does not explicitly teach the limitation of a statistical analyzer. Horvitz does teach that a classifier module is used to output a probabilistic confidence level for incoming messages based on the extracted feature vector (see col. 10, lines 10-15; col. 13-14).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Horvitz by specifying the classifier module as a statistics analyzer since the same functionality of classifying e-mail messages is achieved.

As to claim 2, Horvitz teaches the method as recited in claim 1, wherein the statistics gathered using the classifier module include a number of words capitalized (see col. 9, lines 20-50, Horvitz discloses that words capitalized can be identified and accounted for in a message).

Horvitz does not explicitly teach the claimed limitation of ratio of words capitalized to a total number of words. However, Horvitz discloses that various features in email are identified indicative of SPAM that include whether a predetermined word is capitalized (see col. 9, lines 20-50).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Horvitz by specifying analysis of ratio of the number of capitalized words to total number of words to detect SPAM. One would be motivated to do so since the ratio of capitalized words to total number of words represents SPAM e-mail characteristics/features.

As to claim 3, Horvitz teaches the method as recited in claim 1, wherein the statistics gathered using the classifier module include a series of punctuation marks in the text (see col. 9, lines 40-50).

Horvitz does not explicitly teach the claimed limitation punctuation to word ration.

However, Horvitz discloses that various features in email are identified indicative of SPAM that include whether a text includes a series of punctuation marks (se col. 9, lines 20-50).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Horvitz by specifying analysis of punctuation to word ratio to detect SPAM. One would be motivated to do so since the punctuation to word ratio represents SPAM e-mail characteristics/features.

As to claim 4, Horvitz teaches the method as recited in claim 1.

Horvitz does not explicitly teach the clamed limitation wherein the statistics gathered using the classifier include a number of uniform resource locators (URLs) in the text.

Horvitz does teach that the feature detector detects whether the message includes handcrafted feature (see col. 11, lines 20-65).

However, "Official Notice" is taken that the concept and advantages of identifying the number of URLs in a text message is old and well known in the art.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Horvitz by specifying identification of the number of URLs present in the message content. One would be motivated to do so since the number of URL's in a message text is indicative of SPAM.

As to claim 5, Horvitz teaches the method as recited in claim 1.

Horvitz does not explicitly teach the clamed limitation wherein the statistics gathered using the classifier include at least one telephone number in the text.

Horvitz does teach that the feature detector detects whether the message includes handcrafted feature (see col. 11, lines 20-65).

However, "Official Notice" is taken that the concept and advantages of identifying the a telephone number in a text message is old and well known in the art.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Horvitz by specifying identification of a telephone number in the message content. One would be motivated to do so since the presence of a telephone number in a message text is indicative of SPAM.

As to claim 6, Horvitz teaches the method as recited in claim 1.

Horvitz does not explicitly teach the claimed limitation, wherein the statistics gathered using the classifier include results of an analysis of character type.

Horvitz does teach that the feature detector detects whether the message includes handcrafted feature (see col. 9; col. 11, lines 20-65).

However, "Official Notice" is taken that the concept and advantages of identifying character type in a text message is old and well known in the art.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Horvitz by specifying identification of a character type in the message content. One would be motivated to do so since the presence of predefined character types in a message text is indicative of SPAM.

As to claim 7, Horvitz teaches the method as recited in claim 1.

Horvitz does not explicitly teach the claimed limitation, wherein the statistics gathered using the classifier include results of an analysis of a URL in the text.

Horvitz does teach that the feature detector detects whether the message includes handcrafted feature and various text features (see col. 9; col. 11, lines 20-65).

However, "Official Notice" is taken that the concept and advantages of analyzing URLs is old and well known in the art.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Horvitz by specifying analysis of URLs in the message content. One would be motivated to do so since the presence of certain types of URLs in a message text is indicative of SPAM.

As to claim 8, Horvitz teaches the method as recited in claim 1, wherein the statistics gathered using the statistical analyzer include results of analysis of e-mail addresses in the text (see col. 9, lines 20-50).

As to claim 9, Horvitz teaches the method as recited in claim 1, wherein the statistics gathered using the classifier include results of a message header field analysis (see col. 9-10).

Claim 10 does not teach or define any new limitations above claims 1-9 and therefore is rejected for similar reasons.

As to claim 11, Horvitz teaches the method as recited in claim 1, wherein the statistics are placed in a results table, wherein entries in the table are passed as inputs to a neural network engine (see col. 15, lines 10-20).

As to claim 12, Horvitz teaches the method as recited in claim 1, wherein the statistics are sent to a neural network engine, wherein the neural network engine compares the statistics to predetermined weights for determining whether the electronic mail message is an unwanted message (see col. 15, lines 55-65).

As to claim 13, Horvitz teaches the method as recited in claim 12, wherein the neural network engine is taught to recognize unwanted messages (see col. 14, lines 1-67; col. 15, lines 1-67, Horvitz discloses that the classifier is trained to recognize SPAM).

As to claim 14, Horvitz teaches the method as recited in claim 13, wherein examples are provided to the neural network engine, wherein the examples are of wanted messages and unwanted messages, and each of the examples is associated with a desired output (see col. 13-16).

As to claim 15, Horvitz teaches the method as recited in claim 14, wherein each of the examples are processed with statistics by the neural network engine for generating weights for the statistics, wherein each of the weights is used to denote wanted and unwanted messages (see col. 15, lines 45-65).

As to claim 16, Horvitz teaches the method as recited in claim 15, wherein the neural network engine utilizes adaptive linear combination for adjusting the weights (see col. 16-18).

As to claim 17, Horvitz teaches the method as recited in claim 15, wherein logic associated with the neural network engine is updated based on the processing by the neural network engine (see col. 16-18).

As to claim 18, Horvitz teaches the method as recited in claim 17, wherein the neural network engine is updated to recognize an unwanted message, the message is identified as an unwanted message, the features of the message that make the message unwanted are identified, and the identified features are stored and used by the neural network to identify subsequent unwanted messages (see col. 21-22).

As to claim 19, Horvitz teaches the method as recited in claim 1, wherein the neural network engine analyzes previous user input for determining whether the message is unwanted (see col. 15, lines 55-65).

Claims 20-22 do not teach or define any new limitations above claims 1-19 and therefore are rejected for similar reasons.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saleh Najjar whose telephone number is (703) 308-7613. The examiner can normally be reached on Monday-Friday from 6:30 to 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, *Ario Etienne*, can be reached on (703) 308-7562.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-9600. The central official fax number for the group is (703) 872-9306.



Saleh Najjar

Primary Examiner / Art Unit 2157